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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,546	03/29/2004	Seiichi Mizukoshi	86825RLO	3435

7590
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EXAMINER

SITTA, GRANT

ART UNIT	PAPER NUMBER
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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/812,546	Applicant(s) MIZUKOSHI ET AL.	
	Examiner GRANT D. SITTA	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 8 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe et al (2003/0122759) hereafter, Abe.

3. In regards to claim 1, (Currently Amended) Abe teaches a display device, for carrying out image display on an active-matrix OLED display panel by controlling current flowing in OLED elements for a plurality of pixels based on image data, comprising: display setting circuitry (fig. 1A (304-306) including a multiplier (fig. 26 (22)) and an adder (fig. 26 (12)) for setting a relationship between image data and current values for current flowing in all OLED elements [0099] in response to an input adjustment signal, to set contrast or brightness (abstract "luminance"); estimation circuitry for estimating total panel (fig. 26 200 Since 200 is using Ra, Ga, and Ba it is using the total panel current) current flowing in all of the plurality of pixels when carrying out display for the display panel based on the image data ((fig. 26 (200 and 201) "In the above-described FIG. 26, 200 designates an integration part (integration unit) for

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integrating 1 frame portion of the image data as the luminance desired value, and 201 designates a multiplier. This integration part 200 and the multiplier 201 are the high voltage power supply current value calculation circuit as a unit for calculating a current value (I_a) of the high voltage power supply from the image data" (463)); and current control circuitry (fig. 26 (ABL Circuitry)) for controlling actual panel current (fig. 26 I_a and I_{max}) by correcting the set contrast or brightness (abstract "luminance") based on the panel current estimated by the estimation circuitry (fig. 26 (200 and 201)) , so that the actual panel current does not exceed a selected maximum value (fig. 26 (202) [0547] "designates a register which stores the limit value (I_{max}) of the high voltage current").

4. In regards to claim 2, (Currently Amended) Abe teaches the display device of claim 1, wherein, when the total panel current estimated by the estimation means does not exceed a specified set value, correction of contrast or brightness by the current control circuitry is not effected ([0470] if the gain is equal to 1, i.e. G_1 is 1, correction of contrast or brightness by the current control circuitry will not be effected).

5. In regards to claim 8, (Original) Abe teaches the display device of any one of claim 1, wherein the estimation means estimates total current based on the sum or average of image data for a single image frame or a plurality of image frames ([0468] average current within time assuming that 1 frame is set as the unit time").

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abe.

9. In regards to claim 4, Abe discloses the limitations of claim 1.

Abe differs from the claimed invention in the present embodiment A (fig. 26) Abe does not disclose the display device of claim 1, further comprising a nonvolatile memory for storing one or more coefficients adapted for use in correction of contrast or brightness, and wherein the current control circuitry uses the one or more coefficients to correct the contrast or brightness.

However, Abe teaches a second embodiment B (fig. 14) wherein a system and method, further comprising a nonvolatile memory (fig. 14 "ROM" since ROM is non-

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voltage) for storing one or more coefficients ([0318-0321] SVDrv is used to for Compensation Data Calculation Unit and the ROM includes a table) adapted for use in correction of contrast or brightness ([0319] "average luminance"), and wherein the current control circuitry (fig. 14 (222)) uses the one or more coefficients to correct the contrast or brightness ([0319] "average luminance" and [319-326])

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Abe to include the use of the table since the table does not need to recalculate each time, as a result, making to process more efficient with quicker response as stated in ([0183 and 319-330])

Allowable Subject Matter

10. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5.(Currently Amended) The display device of claim 1,
wherein the current control circuitry controls contrast based on the following equation:

$$C' = C - (C + B / (k \cdot Lw0) - a) * (lcal - lcalx) / (lmax - lcalx),$$

where C is contrast setting value, B is brightness setting value, Lw0 is maximum luminance at initial setting time (C=1, B=0), a is luminance at the time panel current becomes lMax, when displaying a totally white surface, divided by Lwo, lcal is panel

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current when subjecting original image data values to linear conversion, I_{max} is maximum current flowing in the panel, I_{calx} is the I_{cal} value (can be arbitrarily set) for the point at which maximum luminance begins to lower, and k is gamma correction input data divided by luminance.

6.(Currently Amended) The display device according to

claim 1, wherein the estimation circuitry estimates panel current based on the following

equation: $I = R_{frame}/E_r + G_{frame}/E_g + B_{frame}/E_b$,

where, R_{frame} is the sum total of R pixel data for one frame, G_{frame} is the sum total of G pixel data for one frame, B_{frame} is the sum total of B pixel data for one frame, E_r is R luminance divided by current flowing in one R pixel, E_g is G luminance divided by current flowing in one G pixel, and E_b is B luminance divided by current flowing in one B pixel, wherein R, G, and B respectively means to Red, Green and Blue.

Response to Arguments

11. Applicant's arguments with respect to claim 1-2, 4-6, and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okamoto (2001/0035850) and Sagano et al (6,870,522)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT D. SITTA whose telephone number is (571)270-1542. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GDS
February 28, 2008


SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER